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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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EXAMINER

CARIASO.A

ART UNIT	PAPER NUMBER
2875	

DATE MAILED: 09/13/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

## Office Action Summary

Application No.

09/342,210

Applicant(s)

KOHNO, MICHIO

Examiner

Alan Cariaso

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. § 119

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☒ All b) ☐ Some \* c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☒ received.
2. ☐ received in Application No. (Series Code / Serial Number) \_\_\_\_.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

### Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.

- 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Priority*

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 1-6, 8, 9, 11-16, 18, and 20-26 are rejected under 35 U.S.C. 102(e) as being anticipated by NAGAYAMA (US 5,797,674).
4. NAGAYAMA discloses an Hg light source (300); converting optical systems being/including any of an elliptical mirror (301), first and second lenses (302, 312) and a fly-eye lens and lens unit (figs. 24, 25) inherently forming a light distribution as claimed; a light transmitting element being an optical fiber bundle or optical rod (303, 200, 153); an exposure apparatus transferring a pattern of a mask onto a wafer (128, 4) and development thereof (col. 1, lines 39-49; cols. 12-19).
5. As for the recitation in claims 22 and 24 that reads "for converting a luminous intensity distribution of plural light fluxes (supplied by a plurality of laser light sources)

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having different incidence angles", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

6. Claims 1-3, 5, 9, 11-13, 15, 20, 22, 23, 25, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by OHTA (US 4,497,013).
7. OHTA (see figures 4 and 6; cols 1-2 and 5-6).
8. Claims 1-4, 9, 11-14, and 20-23 are rejected under 35 U.S.C. 102(b) as being anticipated by FORKNER et al (US 5,559,911).
9. FORKNER (see fig. 13, fig. 8; col. 6, lines 49-64, col. 7, lines 36-60) .

### ***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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11. Claims 7 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over FORKNER et al (US 5,559,911) in view of RYKOWSKI et al (US 5,706,376).

12. FORKNER discloses applicant's invention except the converting optical system being an optical rod and lens unit as claimed. RYKOWSKI (fig. 1) teaches the use of a optical rod (28) and lens (34, 36) unit for the purpose of directing light into at least one optical fiber (40). It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to modify the illumination optical system of FORKNER et al to include the type of optical rod and lens unit as taught by RYKOWSKI et al in order to convert an illuminance distribution (52) of a light source image (12) into a luminous intensity distribution upon a predetermined plane (46) at an entrance area of a fiber optic.

13. Claims 10 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over NAGAYAMA (US 5,797,674) in view of MARKLE (US 4,530,565).

14. NAGAYAMA discloses applicant's invention except the light transmitting element having a square cross-sectional entrance end and an arcuate-shaped cross-sectional exit end. MARKLE teaches the optic systems used in microlithography including the use of an optic fiber bundle (10) having a square cross-sectional entrance end (30) and an arcuate-shaped cross-sectional exit end (32) for the purpose of outputting uniformly illuminated arcuate shaped beam of light. It would have been obvious to one having ordinary skill in the art at the time of applicant's invention to modify the illumination optical/exposure system of NAGAYAMA to include the type of shaped optic fiber bundle

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as taught by MARKLE to output uniformly illuminated light of arcuate shape in microlithographic processes.


**Conclusion**

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. YAMAMOTO et al (US 5,661,837) show an illumination optical/exposure apparatus applied to masked semi-conductor samples that includes use of elliptical reflectors, fiber optic bundle elements, fly-eye and lens units.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Cariaso whose telephone number is (703) 308-1952. The examiner can normally be reached on M-F (8:30-6:00 PM) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

  
Alan Cariaso  
Primary Examiner  
Art Unit 2875

AC  
September 10, 2000